

AMENDMENTS TO THE CLAIMS:

Please cancel withdrawn claims 28-31 without prejudice to their reintroduction in a divisional application. Please amend claims 44, 47 and 49. Please add new claim 50.

The listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF THE CLAIMS

Please amend claims 44, 47 and 49 as follows. Please add new claim 50.

1-2. (Cancelled)

3. (Previously Presented) A stent as claimed in claim 24 wherein the supporting portion of the stent is fabricated to incorporate a non-planar curved form.

4. (Cancelled)

5. (Previously Presented) A stent as claimed in claim 24 which is of generally hollow tubular shape with three-dimensional curvature.

6. (Previously Presented) A stent as claimed in claim 24 in the form of an open lattice generally tubular framework with discrete openings at each end thereof.

7-11. (Cancelled)

12. (Previously Presented) A stent as claimed in claim 24 in combination with a device which assists in monitoring the condition of the vessel.

13. (Original) A stent as claimed in claim 12 wherein the device is a sensor adapted to transmit a signal responsive to one or more internal flow conditions.

14. (Original) A stent as claimed in claim 13 in which the sensor is ring-shaped and is electrically connected to a remote module incorporating power supply, signal detection and recording means.

15. (Previously Presented) A stent as claimed in claim 13 wherein the sensor is adapted to transmit signals which can be monitored by at least one of ultrasound, magnetic resonance imaging and electron spin resonance imaging techniques.

16. (Previously Presented) A stent as claimed in claim 13 wherein the sensor portion forms an integral part of the stent and the means of excitation and signal detection are entirely extracorporeal.

17-23. (Cancelled)

24. (Previously Presented) A stent for insertion into a vessel, which stent includes a supporting portion around which part of an intact vessel other than a graft can be placed, so that the stent internally supports an interior wall of that vessel part, wherein the supporting portion comprises a hollow tube, the walls of which have openings therein so that when the stent is inserted in a vessel the interior wall of the vessel is exposed via said openings to fluid flow along the vessel, and wherein the supporting portion of the stent, when in the vessel, has a non-planar, at least partially helical shape wherein a central axis of the hollow tube forms a non-planar three-dimensional at least partially helical shape and the hollow tube is capable of imposing said three-dimensional at least partially helical shape on a central axis of the vessel, whereby fluid flow within the stent supported part of the vessel follows the three-dimensional at least partially helical shape to induce swirl flow.

25. (Previously Presented) A stent according to claim 24 which is adapted to flex three dimensionally but which has sufficient torsional stiffness to induce and maintain in use the non-planar curvature.

26. (Previously Presented) A stent as claimed in claim 24 fabricated from a shape memory alloy.

27. (Previously Presented) A stent as claimed in claim 24 fabricated from a linked mesh or series of linked wire members which is coiled or partly coiled or helical or partly helical.

28-43. (Cancelled)

44. (Currently Amended) A stent for insertion into a vessel, comprising:
a pre-shaped flexible supporting portion which supports an interior wall of the vessel and imposes is capable of imposing a shape thereon, comprising:

a hollow tube including a wall,

a plurality of openings located in the wall of the tube so that the interior wall of the vessel is exposed, via said openings, to fluid flow along the vessel, and

wherein the hollow tube is pre-shaped so as to have an at least partially helical shape, wherein a central axis of the hollow tube forms a non-planar three-dimensional at least partially helical shape and the hollow tube is capable of imposing said three-dimensional at least partially helical shape on a central axis of the vessel, so that a swirling fluid flow is induced within the vessel.

45. (Previously Presented) The stent of claim 44 further comprising a sensor operatively connected to said hollow tube, said sensor being adapted to transmit a signal responsive to one or more internal flow conditions.

46. (Cancelled)

47. (Currently Amended) A stent for insertion into a blocked, constricted or

otherwise flow restricted vessel, comprising:

a hollow tube which ~~supports~~ is capable of supporting an interior wall of the vessel;

a plurality of openings located in the wall of the tube so that the interior wall of the vessel is exposed, via said openings, to fluid flow along the vessel; and,

wherein said hollow tube is pre-shaped so as to have an at least partially helical shape, and wherein a central axis of the hollow tube forms a non-planar three-dimensional at least partially helical shape and the hollow tube is capable of imposing said three-dimensional at least partially helical shape on a central axis of the vessel so that a swirling fluid flow is induced within the vessel.

48. (Previously Presented) The stent of claim 47 wherein said hollow tube creates a generally uniform distribution of fluid flow wall shear stress within the hollow tube.

49. (Currently Amended) A stent for insertion into a blocked, constricted or otherwise flow restricted vessel, comprising:

a hollow tube, including a plurality of openings located in a wall thereof, ~~which~~ supports such that an interior wall of the vessel, ~~wherein the interior wall of the vessel is~~ capable of being exposed to fluid flow along the vessel when the hollow tube is inserted into the vessel, wherein the hollow tube is capable of supporting the interior wall of the vessel; and,

wherein said hollow tube is pre-shaped so as to have an at least partially helical shape, and wherein a central axis of the hollow tube forms a non-planar three-dimensional at least partially helical shape and the hollow tube is capable of imposing said three-dimensional at least partially helical shape on a central axis of the vessel so

that a swirling fluid flow is induced within the vessel.

50. (New) The stent of claim 49 wherein said hollow tube comprises a shape memory alloy.